

WHAT IS CLAIMED IS:

1. An apparatus for separating and feeding printing paper sheets individually from a paper tray on which the printing paper sheets are stacked, the apparatus comprising:
one single separating/transferring roller for sucking a paper sheet from the paper stack on the paper tray and delivering the paper sheet to a scanning unit.
2. The apparatus according to claim 1, wherein the separating/transferring roller is so spaced that its upper surface does not have an effect on the back of the lowermost paper sheet on the paper tray and the separating/transferring roller has such a diameter that its lower surface faces an upper window of the scanning unit.
3. The apparatus according to claim 1, further comprising a rubber pad installed in the proximity to a front end of the paper stack on the paper tray, for facilitating the separation of the paper sheet.
4. The apparatus according to claim 1, wherein the separating/transferring roller has at least one nozzle part formed on an outer periphery for sucking the paper sheet, and a vacuum pump for providing absorption force to the nozzle part.
5. The apparatus according to claim 1, further comprising a paper guiding part formed in a shape that corresponds to a shape of an outer periphery of the separating/transferring roller, for guiding a paper sheet delivered by the separating/transferring roller.

6. The apparatus according to claim 5, further comprising: a paper perception sensor unit for sensing whether a paper is present on the paper tray; a scanning sensor unit installed in the paper guiding part, for sensing a delivered paper sheet; and a controlling unit for controlling operating of the vacuum pump.

7. The apparatus according to claim 4, wherein a plurality of the nozzle parts is formed on a straight line along an axial direction of the separating/transferring roller.

8. The apparatus according to claim 4, wherein a plurality of the nozzle parts is formed alternately in a cylindrical direction on two parallel straight lines along an axial direction of the separating/transferring roller.

9. The apparatus according to claim 1, wherein the separating/transferring roller has a frictional part on its outer peripheral surface so that increased frictional force is exerted on the delivered paper sheet.

10. The apparatus according to claim 4, wherein the separating/transferring roller has a frictional part on its outer peripheral surface so that increased frictional force is exerted on the delivered paper sheet.

11. The apparatus according to claim 4, wherein the separating/transferring roller has a frictional part on its outer peripheral surface except vicinity of the nozzle part so that increased frictional force is exerted on the delivered paper sheet.

12. The apparatus according to claim 7, wherein the separating/transferring roller

has a frictional part on its outer peripheral surface except vicinity of the nozzle part so that increased frictional force is exerted on the delivered paper sheet.

13. The apparatus according to claim 6, wherein the controlling unit operates the vacuum pump if a scanning command of a user is input after the paper perception sensor unit is turned “on.”

14. The apparatus according to claim 6, wherein the controlling unit stops operation of the vacuum pump if the scanning sensor unit is turned “on” by a front end of the delivered paper sheet stuck on the outer periphery of the separating/transferring roller, and operates again the vacuum pump if a rear end of the delivered paper sheet passes by the scanning sensor unit.

15. The apparatus according to claim 13, wherein the controlling unit stops operation of the vacuum pump if the scanning sensor unit is turned “on” by a front end of the delivered paper sheet stuck on the outer periphery of the separating/transferring roller, and operates again the vacuum pump if a rear end of the delivered paper sheet passes by the scanning sensor unit.

16. The apparatus according to claim 6, wherein the controlling unit stops operation of the vacuum pump if both the paper perception sensor unit and the scanning sensor unit are all turned “off.”

17. The apparatus according to claim 14, wherein the controlling unit stops

operation of the vacuum pump if both the paper perception sensor unit and the scanning sensor unit are all turned “off.”